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EXAMINER

SAVAGE, MATTHEW O

ART UNIT PAPER NUMBER

1723

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23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/555,140

Applicant(s)

KLEIN ET AL.

Examiner

Matthew O Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 15-22 and 25-35 is/are pending in the application.
- 4a) Of the above claim(s) 25-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13, 15-22 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Prosecution of this application has been re-opened so that the new grounds of rejection set forth below can be entered. Accordingly, this action is non-final.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The concept of the cellulose containing filter layers including up to but not including 50% of synthetic fibers lacks basis in the original specification and is considered new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13, 15-22, and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Concerning lines 8-9 of claim 13 and line 9 of claim 35, it is unclear as to what type of paper a "predominantly cellulose containing filter paper" implies. In particular, it is unclear as to whether applicant is claiming cellulose contents of "up to 50%" as taught on page 3 of the instant specification or cellulose contents of greater than 50% as implied by the common dictionary meaning of the term.

As to claim 13 and 35, it is unclear as to what tolerance "approximately" (see line 7 of both claims) and "of about" (see line 9 of claim 13 and line 11 of claim 35) imply, and as to whether or not the terms imply the same or different tolerances.

Regarding line 9 of claim 13 and line 10 of claim 35, it is unclear as to what type of filter paper the term "compressed filter paper" implies.

Concerning claim 19, it is unclear by "during a folding process" as to whether or not applicant is claiming a star folded or pleated filter structure.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 15-19, 21, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Saboe or Togashi et al.

With respect to claims 13 and 35, Kadoya discloses a filter element (see FIGS. 1-6) having a plurality of layers 5, 2 joined together (e.g., by thermal fusing, see lines 1-4 of col. 3), the successive layers in the flow direction exhibiting an increasing degree of separation and a decreasing degree of storage capacity (e.g., with respect to larger diameter particles, see lines 5-38 of col. 3), the inflow layer 5 being comprised of synthetic fibers of a nonwoven web (e.g., rayon and polyester, see lines 67-68 of col. 2) and the discharge layer 2 being comprised of a predominantly cellulose containing filter paper (e.g., linter and pulp, see lines 65-66 of col. 2), the filter paper layer being considered "compressed" since it has a higher density than that of the other layers and/or because paper is made by a compression process, the layers having surface weights that lie within applicant's claimed range (see the thickness values and density values disclosed in col. 3, lines 5-14, and lines 45-64). Kadoya fails to specify the nonwoven web as being "melt-blown". Sabee discloses an analogous non woven fabric (e.g., composed of rayon and polyester, see lines 25-65 of col. 7) formed by a melt blowing process (see lines 14-63 of col. 6) and suggests that such a fabric has a uniform porosity and is suitable for use as a filter medium (see from line 55 of col. 5 to line 14 of col. 6). It would have been obvious to have modified the filter of Kadoya so as to have included a melt-blown non woven web as suggested by Sabee in order to provide a web having a uniform porosity. Alternately, as best understood, Togashi et al disclose the concept of using an inflow layer formed of a melt blown non woven web positioned upstream of a discharge layer formed of a finer filter medium and suggests that such an arrangement increases the dust holding capacity of the filter. It would have

been obvious to have modified the filter of Kadoya so as to have included an inflow layer formed of a melt blown non woven web as suggested by Togashi et al in order to improve the dust holding capacity of the filter

As to claim 15, Kadoya discloses at least three medium layers joined together as recited in the claim (see FIGS. 3-6).

Regarding claim 16, Kadoya discloses an intermediate medium layer 5b (see FIGS. 3-6) that is considered compressed with respect to the inflow side layer 5a since it has a higher density than that of the inflow side layer 5a (see lines 56-57 of col. 3), and Sabee discloses a melt blow non-woven web.

Concerning claim 17, Kadoya discloses a star folded filter element (see FIG. 7).

Regarding claim 21, Kadoya discloses a cellulose containing filter layer including up to but not including 50% synthetic fibers (e.g., 15% rayon fibers, see lines 65-68 of col. 2).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Tagashi et al as applied to claim 13 above, and further in view of applicant's admission on lines 17-33 of page 10 of the appeal brief filed on 11-22-02.

Kadoya, Sabee, and Tagashi et al fail to disclose the layers of filter medium as being welded together by ultrasound as recited in claim 18, the layers of filter media being joined together by surface pressure by a folding process as recited in claim 19, or the layers of filter media as being adhesively bonded together by gluing with a

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powdered adhesive or with a hot melt impregnating agent as recited in claim 20, however, applicant admits that such arrangements are well known in the art on lines 17-33 of page 10 of the appeal brief filed on 11-22-02. Accordingly, it would have been obvious to have modified the filter suggested by Kadoya and Sabee so as to have included the well known bonding arrangements recited in claims 18-20 in order to facilitate construction of the filter utilizing joining techniques that were well known in the art.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Togashi et al as applied to claim 21 above, and further in view of EP 338,479 to Klimmek et al.

Kadoya, Sebee, and Togashi et al fail to specify the cellulose containing filter layer as including glass fibers. Klimmek et al disclose an analogous filter that includes a filter paper support layer including glass fibers and suggests that the fibers increase the strength of the filter paper layer. It would have been obvious to have modified the cellulose containing layer suggested by Kadoya so as to have included glass fibers as suggested by Klimmek et al order to increase the strength of the paper layer.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The rejections under 35 U.S.C. 112, first paragraph in which the original specification was held to be non-enabling have been withdrawn in view of the comments set forth on pages 5-11 of the appeal brief filed on 11-18-02.

Applicant argues on page 12 of the appeal brief that the disclosure of "up to 50%" given on page 3 of the specification is consistent with the common meaning of the term "predominantly" used in claims 13 and 35, however, it is held that such phrases/terms are inconsistent since "up to 50%" includes 50% whereas the term "predominantly" implies amounts of greater than 50%.

The arguments against the rejections under 35 U.S.C. 103 set forth in the appeal brief have been considered but are moot in view of the new grounds for rejection set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O Savage whose telephone number is 703-308-3854. The examiner can normally be reached on Monday-Friday, 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda W. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

M. Savage
Matthew O Savage
Primary Examiner
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January 21, 2003